

ABSTRACT OF THE DISCLOSURE

5

This invention relates to radioactively coated devices, preferably radioactively coated medical devices. These coated devices are characterized as having a low rate of leaching of the radioisotope from the surface of the coated device and a uniform radioactive coating, and are therefore suitable for use within biological systems.

10

Methods for coating a device with a radioisotope comprising are also disclosed. One method comprises immersing the device within a solution containing a γ , β^+ , α , β^- or ϵ (electron capture) emitting radioisotope, then exposing the immersed substrate to tuned vibrational cavitation to produce a coated substrate. A second method involves coating a substrate using electroless plating, and yet a third method involves the use

15

of electroplating a radioisotope onto a substrate of interest. With these methods, the coating procedures are followed by baking the coated substrate at a temperature below the recrystallization temperature of the substrate. Substrates coated using the methods of this invention exhibit very low rates of leaching of the coated radioisotope, and are suitable for use within medical applications, for example as stents, catheters, seeds,

20

protheses, valves, staples and other wound closure devices, where a localized therapeutic treatment is desired.